WESTERN NIGERIA

Annual Report

of

The Livestock Division

of

The Ministry of Agriculture and Natural Resources

1958-59

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FOREWORD

By

THE HONOURABLE CHIEF G. AKIN DEKO

Minister of Agriculture and Natural Resources

This report for the year 1958-59 is being issued at a time when the policy of the Ministry is undergoing a considerable change, a change which looks forward to expansion in both animal husbandry and veterinary activity.

Although the Livestock Division was badly under-staffed throughout the year the report bears witness to the efforts and solid achievements of the Livestock and Veterinary Staff of the Ministry and we look forward to a period of rapid expansion in the next two years.

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1.—INTRODUCTION

On 1st April, 1958, the Ministry of Agriculture and Natural Resources underwent integration of its dependent Departments. The Department of Agriculture was split into three main Divisions covering Extension, Research and Livestock. The latter division was composed of the animal husbandry projects of Agege Dairy, Fashola Stock Farm and the Poultry Development Station, Fashola. These ex-Department of Agriculture Stations were, with the ex-Veterinary Department Staff and Stations wedded into one division under the Chief Livestock Officer.

The distribution of posts and projects in the new division is as under—

A.—Headquarters:

Chief Livestock Officer
Senior Livestock Officer
Hides Improvement Officer.

B.—Animal Health Services:

Veterinary Centres at Oyo, Ibadan, Abeokuta
Agege, Warri, Akure and Benin
Livestock Investigation Centre, Ado-Ekiti
Veterinary Immunisation Centre, Shaki.

C.—Hides and Skins Inspectorate:

Assistant Hides Improvement Officers in Ibadan
Abeokuta and Benin.

D.—Animal Husbandry Projects:

Agege Dairy
Fashola Stock Farm
Poultry Development Station, Fashola
Cattle Extension Scheme, Shaki.

2.—STAFF

The main limitation on the activities of the Division has been the acute shortage of Livestock and Veterinary Officers. At one stage during the year under review only two Veterinarians were on duty in the Region, one acting in the post of Chief Livestock Officer and the other stationed in Oyo. The latter Officer was required to deal with any outbreaks of disease in the Region. Even at the close of the year, there were only two Veterinary Officers on duty, one in Oyo and one in Akure. At this time the veterinary activities in Abeokuta/Ijebu/Colony Provinces were supervised by the Senior Livestock Officer from this Headquarters. At the end of March 1959, out of an establishment of nine Veterinary Officers only three posts were filled, all by officers on contract, one of whom was then on leave.

The filling of the Professional Officer establishment of this Division is unlikely to be satisfactory until there are qualified Nigerian Officers willing to accept service in this Region. The employment of overseas officers on one/two tour contracts can only provide a stop gap expedient until the twelve scholarship holders sent by this Region for overseas training in Veterinary Science graduate and return to take up their responsibilities in Western Nigeria.

Two vacancies exist in the Assistant Hides Improvement Officer grade. These posts should soon be filled by trainees now undergoing courses overseas.

3.—ANIMAL DISEASES

A.—Cattle

(*a*) *Rinderpest.*—Two outbreaks of this disease occurred during the year, one in the Badagry area and the other near Abeokuta. In each case the outbreak was confined to a small herd. The mortality for both outbreaks was fifty-five out of a total of 155 cattle.

(*b*) *Blackquarter.*—Six young cattle were reported as having died of this disease in the Shaki area during the year. The diagnosis was reached on the history and symptoms, no bacteriological examination being carried out.

(*c*) *Haemorrhagic Septicaemia.*—An outbreak of this disease occurred at Araromi, Ikeja Division, Colony Province in a herd of thirty-seven animals, all of which were affected.

B.—Sheep and Goats

The disease picture in these two classes of Livestock is very difficult to ascertain accurately. This is largely due to the nature of their husbandry in this Region where they are maintained not in flocks but in ones and twos round the houses in the village.

Undoubtedly Caprine Pleuropneumonia exists in this Region; confirmation of this has been obtained from the Federal Laboratories at Vom. Efforts have been made to institute vaccination against this disease particularly in the Benin area.

Sheep and goats suffer from four main conditions, Pneumonia, Enteritis, Footrot and Dermatitis. The first two conditions have shown response to Sulphamethazine given parenterally. Where possible, Foot baths of Copper Sulphate have been established to treat footrot. The skin conditions usually met with have been Mange.

At the Livestock Investigation Centre, Ado-Ekiti where sheep are maintained as a flock, a dermatitis mainly confined to the head was encountered during July. The disease progressed through a stage of inability to thrive, to emaciation and death. In some respects it resembled clinically, Pustular Dermatitis. The assistance of the Federal Department of Veterinary Research was called in and a Research Officer came down to Ado-Ekiti to carry out investigations. These have shown that the disease is similar to that described by Nisbet et Bannatyre (Veterinary Record 1955). The organism isolated has been sent to the United Kingdom for further identification.

C.—Pigs

Among this class of livestock, those receiving veterinary attention are almost entirely confined to Government Piggeries where Large Whites are maintained.

At the Piggery at Moor Plantation, Ibadan, two cases of anthrax were reported. Following this all pigs over six months old were vaccinated against this disease.

Three cases of sudden death at Owo Government Farm took place in February 1959. One of these was found on bloodsmear examination to be positive to *Trypanosoma simiae.* A similar case was recorded from the Rural Training Centre, Asaba.

Blood films in respect of the other two animals were negative. The large white boar at the School of Agriculture Farm at Akure developed a pronounced orchitis and had a history of failure at service. The animal failed to respond to treatment and was slaughtered. Sterility among the pigs at W.A.I.F.O.R., Benin failed to respond to treatment and a slaughter policy was instituted.

D.—Horses

Two deaths were ascribed to Tetanus in Ijebu-Ode. Elsewhere in the Region, clinical treatments were confined to Helminthiasis, Trypanosomiasis, Lameness, Wounds and Thrush. The Veterinary Officer, Ibadan succeeded in removing an infected hydrocele from an aged entire.

E.—Dog and Cats

These species were brought for treatment to the Veterinary Centres operated by this Division in the Region.

Rabies was confirmed as under—

Ibadan	5 cases
Ijebu-Ode	1 case
Colony	1 case

Other conditions in dogs and cats brought for attention were Tick Fever, *Trypanosomiasis*, Distemper/Hard Pad, Venereal Granuloma, Helminthiasis and a wide range of parasitic and non-parasitic skins conditions. A number of cats have been brought for treatment exhibiting the toxic effects of B.H.C. The owners have usually considered these cases to be ones of rabies. The history and quick recovery have allowed a more accurate diagnosis to be reached.

F.—Poultry

Fowl Pox was reported from both Ibadan and Oyo Provinces.

Visceral Lymphomatosis has been confirmed by the laboratory examination of material sent from the Poultry Development Station, Fashola. The disease was found to be present in most of the breeds on this station. The breeding policy has been modified accordingly.

Favus has been found to be present in most areas of the Region during the rainy season.

Coccidiosis was reported from the School of Agriculture, Moor Plantation, Ibadan.

Unfortunately, outbreaks of Poultry Diseases are rarely brought to the notice of the staff of this Division until most of the stock have died. This results in insufficient material remaining for an accurate diagnosis to be reached.

4.—TRYPANOSOMIASIS

This disease is found in all parts of the Region. The Veterinary staff have administered treatment to Horses, Cattle, Pigs and Dogs. The parasites found on bloodsmear examination have been—

Trypanosoma	*vivax*
Trypanosoma	*simiae*
Trypanosoma	*congolense*

Positive slides have been forwarded to the West Africa Institute for Trypanosomiasis Research for confirmation. There can be little doubt that the degree of challenge on the major cattle projects such as Fashola Stock Farm, Agege Dairy and the Livestock Investigation Centre, Ado-Ekiti has been reduced by the pasture improvement programme which has resulted in bush clearing and the planting of improved grasses and legumes. The number of positive smears detected on routine blood examination continues to fall on all of these stations.

From past experience it has been ascertained that Ndama bulls issued to farmers often died soon after arrival in their new environment. These deaths were regularly ascribed to Trypanosomiasis. There are several possibilities for the cause of such losses in animals which, at the time of their leaving the stock farm were able to tolerate the degree of challenge met there.

Firstly the tolerance/immunity developed is specific for not only the species met but to a strain within the species. This can be supported by the fact that cattle moving from one T. vivax challenge have succumbed to infection with the same parasite in a different area. It is possible that the strains and stresses of being moved by lorry to a new environment may have upset the animal's tolerance. A third possibility is that a lowering in the animal's level of nutrition in its new environment may adversely affect its ability to withstand the challenge met in the new habitat. This view-point can be supported by evidence found at the University College, Ibadan, where it is known that though the breeding and young stock of White Fulani show no clinical signs of disease the work bulls require supplementary feeding if they are to be preserved from showing clinical evidence of Trypanosomiasis.

A routine has now been established whereby all animals leaving the stock farm on distribution receive at the time of departure, one dose of antrycide prosalt. It is considered that this treatment will afford the animal protection during the period of high susceptibility until it has been able to build up an immunity to the strain of Trypanosoma found in the new environment.

During the year under review, 987 doses of antrycide were given.

5.—HELMINTHIASIS

There can be no doubt that this condition reduces the level of production in all grades of livestock in this Region. On Government farms and other projects where adequate control exists a prophyllactic routine dosing programme is in operation for all cattle. The programme includes the use of piperazine in very young calves and phenothiazine and copper sulphate in animals over three months old.

Faecal examinations are carried out in most of the Provincial Veterinary Centres. Below are enumerated some of the parasites encountered.

Bunostomum	*Phlebotomum*
Ancylostoma	*Caninum*
Ascaris	*Equorum*
Ascaris	*Vitulorum*
Ascaris	*Lumbricoides*
Moniezia	*Sp.*
Echinococcus	*Granulosus*
Ascaridia	*Galli.*

In regard to the smaller ruminants routine anthelmintic treatment is given where these animals are kept as a flock. On occasions the owners of individual animals may bring a sheep or goat for anthelmintic treatment.

On Government farms there has been particular attention given to the use of improved pastures as well as anthelmintic drugs, during the very serious period of risk for young stock in the age bracket between weaning and eighteen months old.

Local tradition insists that cattle will not thrive if allowed to graze in the early morning whilst the dew is still on the vegetation. Perhaps this idea is based on the degree of movement of larvae on damp grasses. At the Cattle Extension Scheme, Shaki, it was found that, owing to the poor grazing available, it was necessary for the cattle to graze from 7 a.m. to 6 p.m. This, coupled with routine anthelmintic treatments, produced lived weight increases greatly in access of those seen in local herds where be-dewed grass grazing was avoided.

6.—ECTOPARASITES

In regard to the control of ectoparasites, B.H.C. has been the agent most generally used. There has, during the year been a gradual change over from hand deticking to spraying. At Fashola a dip bath is still in operation but at other large stations Cooper spray races have been installed. At farms where the cattle populations do not justify the installation of this equipment, manual spray equipment has been used.

In cats and dogs, fleas have proved a troublesome problem. Careful attention to routine dusting with parasiticidal powder gives control but not eradication.

7.—VACCINATION PROGRAMME

Vaccinations are given free of charge to all classes of economic livestock and due to the public health risk to dogs and cats against rabies.

It has been a long up hill struggle to persuade the livestock owners to have their animals protected against the more common diseases. It can be said that there is not today the very heavy losses due to Rinderpest which up to ten years ago regularly occurred in the cattle keeping areas in the Northern part of the Region.

In the Southern parts where cattle receive little husbandry it is rarely possible to get the animals sufficiently controlled to administer vaccines.

In the poultry sphere of the programme, though most of the large scale poultry keepers have their birds vaccinated, a proportion refuse; it is among these flocks that very heavy losses occur.

The village poultry keeper with his six to twelve birds rarely considers it worth while to bring his fowls to the Veterinary Centre for vaccination. This class of owner does respond to some extent, when teams of vaccinators with loudspeaker equipment tour the more out-lying areas.

If consideration is given to the shortage of Veterinary Officers on duty in the Region, the total number of vaccines administered during the year under review indicates that very determined efforts have been made to protect the livestock of the Region against the diseases for which a vaccine is available.

The number of vaccines administered during the year were:

Lapinised Rinderpest Vaccine	10,409
Blackquarter Vaccine	2,639
Haemorrhagic Septicaemia Vaccine	2,061
Anthrax Spore Vaccine	25,404
Bovine Pleuropneumonia Vaccine	4,780
Caprine Pleuropneumonia Vaccine	18,115
Newcastle Disease Vaccine	45,226
Fowl Pox Vaccine	17,104
Fowl Cholera Vaccine	55,349
Fowl Typhoid Vaccine	58,536
Rabies Vaccine	833
Total	240,456

8.—LIVESTOCK SURVEYS

These have never been accurately carried out. It is only possible to estimate the number of animals kept outside Government Farms. As far as cattle are concerned the estimate is based on herd vaccinations. Sheep, Goats, and Poultry kept as they are in this Region under domestic conditions present a more difficult problem. Attempts at estimating the population figures for these grades of livestock have been based on the number kept by the average household and so cannot bear a very close relationship to the actual figures.

Cattle	66,000
Sheep	295,000
Goats	650,000
Pigs	108,000

9.—TRADE STOCK INSPECTION

This branch of the work of the Livestock Division is far from spectacular but of paramount importance if the Region is to maintain freedom from introduced diseases.

Cattle Control Posts are established at strategic points where the stock routes enter the Region and also at centres where stock brought by rail are off-loaded. It is gratifying to note that there has been a marked increase in the number of cattle arriving by rail at the two off-loading points in this Region.

Year	Ibadan			Abeokuta		
	Road	*Rail*	*Total*	*Road*	*Rail*	*Total*
1954-55...	30,118	17,278	47,396	15,608	7,098	22,706
1958-59...	16,337	40,415	56,872	10,816	17,931	28,747

There has also been a slight increase in the number of cattle travelling by lorry on the road between Asaba and Benin.

Trekking cattle several hundreds of miles is not the ideal method of moving stock but it must be appreciated that in addition to the financial considerations there is also the provision of a meat supply to the small towns and villages *en route* which are remote from cattle markets. Efforts have, therefore continued to improve the stock routes passing through this Region, by the provision of overnight kraals and water supplies and by the cutting back of bush overgrowth.

Trade Stock Inspection is carried out at the following Stations—

Ago-Are	Arrivals by Road
Ogbomosho	Arrivals by Road
Ottun-Ekiti	Arrivals by Road
Ikeram	Arrivals by Road
Asaba	Arrivals by Road
Ibadan	Arrivals by Road and Rail
Abeokuta	Arrivals by Road and Rail

The trade in slaughter stock would benefit from the provision by local councils of modern facilities for the marketing and slaughter of livestock.

10.—CLINICAL SERVICES

In the work of a Government Animal Health Division, clinical services should be considered secondary to the control of animal diseases. In this Region where no private practitioners are available to carry out this work it falls to the lot of the Government staff. It is considered that the successful treatment of minor ailments is often an important factor in the promotion of confidence between the veterinary staff and the livestock owners. Facilities have been provided at Veterinary Centres in Abeokuta, Ibadan, Akure, Benin and Warri for the treatment of cases brought in by their owners. Three additional Centres, Oyo, Agege and Ijebu-Ode are projected for 1959-60.

TOTAL TREATMENTS

	Horses	*Cattle*	*Sheep*	*Goats*	*Dogs*	*Pigs*	*Cats*	*Fowls*
Benin/Delta ...	—	1,384	3,993	6,345	2,506	1,424	129	7,995
Abeokuta ...	74	25,753	3,815	9,343	2,546	3,319	—	83,939
Ondo	32	3,419	3,239	7,930	463	1,016	124	3,838
Oyo	15	20,157	870	306	56	94	2	45,649
Ibadan ...	1,239	3,517	1,394	1,378	2,045	704	831	13,139
TOTAL ...	1,360	54,230	13,311	25,610	8,632	6,557	1,086	75,560

11.—REGIONAL DIAGNOSTIC UNIT

This unit was completed during the year and the basic equipment purchased. The acute shortage of professional officers has prevented the opening of this unit. Three junior staff have been trained at the Federal Veterinary Laboratory for duties in the Regional Diagnostic Unit once this can become operational. In the meantime they are employed at Veterinary Centres carrying out the microscopical examination of material sent in by the field staff.

12.—ANIMAL INDUSTRIES

The efficient utilisation of the carcase is dependent on the facilities provided at the place of slaughter. Throughout this Region the slaughter of stock is carried out according to Koranic Law mainly on open slaughter slabs. The dictates of hygiene require proper drainage and ample water, unfortunately these are not always available in this Region.

The hides and skins trade continues to compete with market women for the hides sold at the time the animal is slaughtered. The proportion obtained depends entirely on the price offered. The market women prepare the hide as human food.

Bones are exported from this Region, the figure for 1958-59 being 672 tons.

Dried meat is imported from the Northern Region. During the year under review 3,202 tons were imported.

The subjoined tables give an indication of the difference in the utilisation of animal by-products during the year 1957-58 and 1958-59.

Table I

HIDES AND SKINS TRADE

Provinces	1957-58							1958-59						
	No. of Hides and Skins produced		No. of Hides and Skins exported		Local consumption			No. of Hides and Skins produced		No. of Hides and Skins exported		Local consumption		
	Hides	Sheep and goat skins	Hides	Skins	Local Tanners		Human consumption	Hides	Sheep and goat skins	Hides	Skins	Local Tanners		Human consumption
					Hides	Skins	Hides					Hides	Skins	Hides
Abeokuta	18,481	122	18,002	—	479	112	—	17,400	3,059	17,049	—	—	112	351
Benin	4,897	3,640	1,780	896	—	2,744	3,117	5,133	2,158	1,902	3,048	—	—	3,231
Colony	12,113	924	12,113	—	—	—	—	14,708	481	13,438	—	—	924	1,270
Delta	5,712	525	5,664	—	—	—	48	5,684	431	5,684	—	—	—	—
Ibadan	68,659	6,331	55,406	—	1,040	6,331	12,213	58,644	4,423	33,051	—	800	—	24,793
Ijebu	12,554	1,819	10,294	—	987	1,819	1,273	13,379	1,538	8,222	—	500	—	4,657
Ondo	5,277	1,158	113	—	—	1,158	5,164	5,128	468	150	—	—	—	4,978
Oyo	14,984	257	7,235	—	774	257	6,975	14,577	68	6,050	—	780	—	7,747
TOTAL ...	142,677	14,776	110,607	896	3,280	13,880	27,790	134,653	12,536	85,546	3,048	2,080	1,036	47,027

Table II

AVERAGE COST OF LIVESTOCK

Province	1957-58			1958-59		
	Cattle	Sheep	Goats	Cattle	Sheep	Goats
Abeokuta	£20-£40	80/-	70/-	£30-£45	60/-	50/-
Benin	£25-£40	60/-	60/-	£30-£40	60/-	50/-
Colony	£21-£35	80/-	60/-	£25-£40	80/-	60/-
Delta	£25-£40	60/-	60/-	£30-£40	60/-	50/-
Ibadan	£25-£40	60/-	50/-	£25-£40	60/-	50/-
Ijebu	£30-£40	80/-	—	£30-£40	70/-	60/-
Ondo	£20-£35	60/-	40/-	—	—	—
Oyo	£20-£40	70/-	60/-	£20-£35	70/-	45/-

Table III

BUYING SELECTION EXPRESSED IN PERCENTAGE

Period	1957-58			1958-59		
	Grade 1	*Grade 2*	*Grade 3*	*Grade 1*	*Grade 2*	*Grade 3*
1st Quarter	64	28	8	51	31	18
2nd Quarter	64	27.3	8.3	60	31	9
3rd Quarter	59	30.1	10.9	56	33	11
4th Quarter	62.4	28.4	8.2	55	24	11

Table IV

(*a*) PREVAILING PRICES OF WET BUTCHER HIDES IN PENCE PER LB

Period	1957-58						1958-59					
	Light Hides Grade			*Heavy Grade*			*Light Hides Grade*			*Heavy Grade*		
	1	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*
1st Quarter	6¼	5½	4½	5¾	4¾	3¾	6½	5½	4½	5⅜	4¾	3¾
2nd Quarter	6¼	5⅜	4½	5¼	4½	3¾	6¼	5⅜	4½	5¼	4½	3¾
3rd Quarter	6	5¼	4¾	5	4½	3½	6	5¼	4¾	5	4½	3½
4th Quarter	6⅞	5⅛	4¼	4⅞	4⅛	3⅜	6⅞	5⅛	4¼	4⅞	4⅛	3⅜

(*b*) OVERSEAS PRICES OF DRIED HIDES:

EXTRACTED FROM "THE LEATHER TRADES REVIEW"

	1957-58	*1958-59*
1st Quarter	26*d*	27*d*
2nd Quarter	27½*d*	26½*d*
3rd Quarter	28*d*	26½*d*
4th Quarter	27¼*d*	27*d*

Table V

(*a*) REVENUE: PROSECUTIONS

	1957-58			1958-59		
	No. of Prosecutions	*Fine*		*No. of Prosecution*	*Fine*	
		£ *s* *d*			£ *s* *d*	
1st Quarter	1	5 0 0		—	—	
2nd Quarter	2	5 0 0		6	23 10 0	
3rd Quarter	2	4 0 0		—	—	
4th Quarter	—	—		3	5 0 0	
TOTAL	5	14 0 0		9	28 10 0	

(*b*) FLAYING KNIVES

	No. Manufacture	*Cost*	*Amount realised from sales*
		£ s d	£ s d
1957-58	332	16 12 0	20 10 0
1958-59	420	26 5 0	26 5 0

(*c*) LICENCE FEES

	No. of Drying Premises	*Amount Collected as Licence Fees*
		£ s d
1957-58	132	132 0 0
1958-59	153	155 0 0

Table VI

BY-PRODUCTS

(*a*) DRIED MEAT IMPORTED INTO IBADAN IN TONS

Period	*1957-58*	*1958-59*
	Tons	*Tons*
1st Quarter	696	1,853
2nd Quarter	730	439
3rd Quarter	713	153
4th Quarter	659	757
TOTAL	2,798	3,202

(*b*) BONES

Period	*1957-58*	*1958-59*
	Tons	*Tons*
1st Quarter	162	189
2nd Quarter	143	83
3rd Quarter	179	120
4th Quarter	188	235
TOTAL	672	672

13.—LIVESTOCK IMPROVEMENT

A.—Dairy Farm, Agege

The main objective of this project is the investigation of dairying in the vicinity of a large town. In addition the farm houses the food depot which supplies animal feeding stuffs to farmers and Ministry Stations. Two other sidelines are the Vegetable and Ornamental Gardens.

The farm is situated fifteen miles north of Lagos and has an average (over the last ten years) rainfall of 56.49 inches. In 1958-59, the rainfall was 49.56 inches in seventy-three wet days. During July and August 1958 there was only 0.83 inches in five wet days, in the previous year 18.94 inches fell in thirty-five wet days.

Pasture and Fodders

A.—Experiments

The first results of the fertiliser trials laid down by the Pasture Agronomist were obtained during the year. Two randomised block experiments were observed with the object of—

(*a*) Determining whether there would be a response to inorganic manure, and

(*b*) In which directions this might be significant. Lime, N, P and K were applied to the plots which were selected and fenced off from existing pasture. The investigation was carried out in respect of *Axinopus compressus* and *Panicum maximum*, the two predominant species. Results are shown at the end of this section.

B.—Multiplication of Species

Pangola grass.—A small plot of this newly introduced pasture grass was multiplied twice, and by the end of the wet season had grown in area to half an acre. Stage 3 multiplication on a field scale will take place in the next wet season.

Giant star grass.—A five acre paddock was established in the middle of the farm and made excellent progress from establishment. Annual weeds which were prolific initially were brought under control by two applications of Agroxone at 3 pints per acre by means of the Low Volume Sprayer.

Centrosema.—Six acres at Blocks 39 and 40 which had been planted to centrosema in the previous year were allowed to set seed and so multiply. Weeds were a problem in this plot and could not be tackled with weedicides owing to the dicotyledonous structure of centrosema.

C.—Fodder Grass

Elephant grass.—Seven acres of elephant grass were established on wide rows at Blocks 41 and 42. The inter-row width was fixed at 6 feet 6 inches in order to permit mechanised inter-cultivations subsequent to establishment. Cuttings were planted at 9 inches spacing in the rows and made good growth to inflorescence before the onset of the dry season. This block will be valuable both for the supply of cut fodder for bulls and calves, and for ensilage.

Guatemala grass.—The four acres block adjacent to Pen 3 entered its third year after establishment. Growth was generally poorer than in the previous year, despite fertilising with a mixture of equal parts of superphosphate and nitroplus at the rate of 2 cwt/acre. Weed control was a problem in the normal 27 inches spaced ridges, and by the end of the year it was apparent that this grass requires replanting after three years' establishment under Agege conditions. The drought resistance of this grass is doubtful.

Dairying

The stock of the farm shows the effect of the introduction of exotic blood. White Fulani cows are being up-graded with imported Friesian bulls. The management of the Dairy Farm has continued during the year with effort being directed to the establishment of sound economic principles. The Officer in charge has continued to keep in mind the very real need for the most strict attention to the commercial aspects of milk production.

The long-awaited introduction of the use of the milking parlour was realised on 1st April, 1958. Although the installation of machinery and equipment in the new dairy buildings had been completed some months before hand, delays occurred, notably due to the electrical contractor, before occupation was possible. This situation, however, afforded the opportunity to accustom the milking cows to the new and unfamiliar building, and the herdsmen and dairymen were trained in the routine and technique of operating the new plant.

A record daily production of 62 gallons of milk from 42 cows was achieved on 7th April. This high total represented an average daily yield of 1.47 gallons per cow, while the best performance for this day was recorded by Montbeliard No. 3 with 33lbs of milk.

The total milk production for the year amounted to 15,750 gallons. This was 2,950 gallons more than in the previous year, or an increase in production of 23 per cent. This improvement is attributed to the superior Friesian × Fulani heifers which came into milk during the year.

The table below shows the overall details of production and disposal—

Milk Production and Disposal

Total milk delivered for sale during 1958-59	139,903.75 lbs
Total milk fed to calves	21,582.78 lbs
Total milk produced during the year...	161,486.53 lbs
Total No. of milking cow days	14,284 lbs
Average milk yield/milking cow/day	11.3 lbs
Total No. of cows in herd days	28,586 lbs
Average milk yield/cow in herd/day	5.7 lbs
Average No. of cows in milk	39

Completed Lactations

Seventy-two cows completed lactations during the year to give an average yield of 2,690 lbs in 229 days. There was a wide variation in individual production, the highest of which was recorded by Montbeliard No. M2 with 6,072 lbs in 424 days. The best performance was by Friesian x Fulani half bred No. A46 with 5,841 lbs in 275 days—an average daily yield of 21.3 lbs. It is important to mention that in calculating averages in the recorded performances, all the cows which completed lactations have been included.

A comparison between the breed average performance of White Fulani, Montbeliard and Fulani Friesian half breds is interesting and illustrates the improved milk character of the latter.

Comparative Breed Milk Production, 1958-59

	Cow No.	*Yield in lbs*	*Days in Milk*	*Average Yield Day*
Highest White Fulani Yield	E260	5,332	486	10.9
Highest White Fulani Yield in 305 days ...	E264	5,196	305	17.0
Average yield from 43 cows...		1,849	196	9.4
Highest Friesian Fulani half bred yield ...	A46	5,841	275	21.3
Highest Friesian Fulani yield in 305 days ...	A62	4,423	305	14.5
Average yield from 20 cows...		3,276	265	12.3

Complete records of lactations from which the above figures have been compiled are given at Appendix I.

C.—Herd Performance

The records obtained during the year showed improvement in almost every direction.

The average figures in respect of milk production rose while the days between calves index fell. However, the average lactation period in days fell and was attributed to a number of old White Fulani cows which were due for culling but which were in calf to one of the Friesian bulls, and subsequent to parturition gave extremely low yields.

Comparative herd performance records for the past three years are given in the table below—

Herd Records

	1956-57	*1957-58*	*1958-59*
Total No. of Cows in Herd	69	72	78
Average output of milk per cow, per annum in lbs	1,308	1,835	2,070
No. of lactations of 305 days or more ...	20	11	20
Average yield in 305 days	2,562	2,074	3,833
Range in lactation in lbs	1,706-4,829	363-5,890	14-6,072
Average lactation period in days ...	394	244	219
Average percentage Butter Fat ...	5.2	5.8	5.9
Average yield Butter Fat in month ...	18.2	23.6	20.8
Calving interval in days	487	444	405
Lbs per day between calves	4.1	6.3	10.2

D.—Milk Analyses

In accordance with the Public Health Ordinance a random sample of milk was submitted to the Federal Government Chemist at weekly intervals throughout the year for tests in respect of keeping quality, fat and solids not fat content, and adulteration. The overall result of these analyses showed a slight improvement over the previous year, as shown in the table below—

Milk Tests

		Average	*Highest*	*Lowest*
Total solids ...	1958-59	14.7	18.9	11.3
	1957-58	14.1	15.3	13.3
Butter Fat ...	1958-59	5.9	7.9	4.1
	1957-58	5.8	6.8	4.9
Solids not Fat	1958-59	7.7	10.0	5.2
	1957-58	8.3	9.6	8.1

Methylene Blue Reduction Test

Twenty-five of the total of forty-four bulk samples submitted during the year to the Methylene Blue reduction test in respect of keeping quality did not decolourise in 4½ hours. The remainder returned an average reduction time of 3 hours 20 minutes.

These times may be compared with a relevant extract from the Milk (Special Designations) Order, 1936, of the United Kingdom.

Bacteriological Grading of Milk

Class of Milk	*Reduction Time*	*Approximate number of organisms per ml.*
Class 1: Good	Over 4½ hours	20,000 (or less)
Class 2: Average ...	2½-4½ hours	200,000-2,000,000
Class 3: Poor	Less than 2½ hours	2,000,000-10,000,000

On 15th April a reduction time of half-hour was returned by the Government Chemist. An immediate check of the milking machine equipment revealed a milk residue deposit within the tubes of the clawpiece body. This occurred a fortnight after the initial use of the machine when the milking staff were still comparatively unskilled in the routine daily cleaning and sterilisation programme.

E.—Monthly Milk Production

Monthly Mill Production for three years in Gallons

	Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Average*
1956 ...	760	640	935	950	895	765	685	630	590	610	740	815	751
1957 ...	790	660	905	1,150	1,170	990	1,025	1,065	880	1,035	1,080	980	977
1958 ...	1,150	1,210	1,470	1,720	1,745	1,620	1,490	1,245	1,200	1,160	1,190	1,205	1,367

The table illustrates the seasonal fluctuation in milk production, which has followed a similar pattern over three years. Basically the production curve is controlled by the cycle of pasture growth through the year, and this is closely associated with rainfall deposit. Supplementary feeding with silage in the dry months of December, January and February does much to limit the drop in production at this time of the year, but the answer to this problem probably lies in the direction of irrigated pastures together with the use of inorganic fertilisers.

F.—Breeding Record

(*a*) *Calf production.*—There were sixty-four live births on the farm during the year. This total comprised twenty-five bull calves and thirty-nine heifer calves of grade Friesian and Montbeliard breeding as shown in the table below. The proportion of heifer calves to bulls was unusually high but reversed the results in previous years when a greater number of bull calves was born.

Analysis of Calf Production

	Monthly Production			Breed Analysis							
				½ *bred Fr.*		¾ *bred Fr.*		½ *bred Mont.*		*Pure Mont.*	
	M.	*F.*	*Total*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*
April	2	1	3	1	—	—	—	1	1	—	—
May	1	2	3	1	1	—	—	—	1	—	—
June	1	4	5	1	2	—	2	—	—	—	—
July	1	—	1	1	—	—	—	—	—	—	—
August	2	4	6	—	2	2	—	—	2	—	—
September	—	3	3	—	3	—	—	—	—	—	—
October	2	7	9	2	3	—	3	—	—	—	1
November	4	7	11	1	4	2	1	1	—	—	2
December	1	3	4	—	—	—	1	1	1	—	1
January	5	5	10	1	—	3	5	1	—	—	—
February	3	1	4	1	1	1	—	—	—	1	—
March	3	2	5	1	2	2	—	—	—	—	—
Total	25	39	64	10	18	10	12	4	5	1	4

(*b*) *Calf Birth Weights.*—An improvement in the weight at birth of Friesian-Fulani cross-breds was recorded but a deterioration was noticed in respect of pure Montbeliard calves. This is attributed to the ageing of the latter cows while the former are at their breeding peak. A three-quarter Friesian × White Fulani bull calf weighed 96 lbs and was the heaviest calf at birth which has been produced at this farm. Comparative birth weights are shown in the table below.

Comparative Calf Birth Weights

Number born			*Average weight*	
1957-58	*1958-59*	*Breed*	*1957-58*	*1958-59*
30	28	Half-bred Friesian × Fulani	55.1 lbs	63.3 lbs
17	22	Three-quarter Friesian × Fulani ...	69.7 lbs	71.5 lbs
8	9	Half-bred Montebeliard × Fulani ...	56.2 lbs	58.5 lbs
9	5	Montebeliard	66.9 lbs	58.6 lbs

(*c*) *Calf Live-Weight gain.*—A comparison between the liveweight gains of half and three-quarter bred Friesian, and half and pure bred Montbeliard calves was conducted during the year. The feeding and management of all calves in this experiment were identical. This consisted of colosterum and whole milk until three weeks of age, at 10 per cent body weight/day, followed by whole milk plus skimmed milk until eight weeks and finally skimmed milk until weaning at fifteen weeks. Concentrates and chopped grass were offered from three weeks of age. By eight weeks all calves were taking 2-lb concentrates* and 4 lbs *Panicum maximum* daily. An iodised salt lick and water from the Lagos mains supply in self filling bowls were constantly available.

The calves were housed in a well ventilated building in individual pens 7′ × 4″ with solid partitions and tubular gates. Ear notching and dehorning were carried out at four weeks. Deworming at three, six and twelve weeks of age was practised, using Coopane.

All weighings were carried out at weekly intervals using the same Avery platform scale.

The conclusions of the experiment indicate the marked ability of three-quarter Friesian × White Fulani calves to thrive in the Agege environment at the calf pen stage.

The table below gives the results obtained, with the number of animals observed shown in brackets.

Average calf live-weight gain in lbs,/head/day

	(*i*) ½ *bred Friesian*	(*ii*) ¾ *bred Friesian*	(*iii*) ½ *bred Mont*	(*iv*) *Montebeliard*
Average Live Weight gain/lbs/head/day ...	0.82 (32)	0.98 (23)	0.79 (12)	0.76 (7)
Average Birth Weight in lbs	63.3	71.5	58.5	58.6
Number of days to 200-lb Live Weight ...	167	131	179	186

Calf Concentrates—parts per 100

Maize	40
Groundnut Cake	30
Rice Bran	25
Blood Meal	5

Plus Supplements per 100-lbs

2-lb ICI No. 2 iodised mineral mixture.
1-lb Bone meal.
1-lb Agwu lime.

(*d*) *Calf Starter.*—An importation was made during the year of a calf starter which entirely replaces the feeding of whole milk to calves from the age of three days. This product, F.M.S. Milk Equivalent, gave satisfactory results at a fraction of the cost of feeding whole milk. A Friesian half bred and a Montbeliard calf were reared artificially, apart from colostrum, and their average live-weight gain until weaning of milk substitute at fourteen weeks was 0.71 lb/day.

(*e*) *Calving Interval.*—The average calving interval during the year for sixty-four cows was 390 days. The table below show individual breed performances in this respect.

Calving Intervals in Days

Breed	*No. of Cows*	*Average Calving Interval*
White Fulani	44	413
Montbeliard	5	373
Friesian × Fulani	15	384

(*f*) *Age at first calving.*—The average age at calving of the first nineteen Friesian-Fulani heifers was three years four months.

(*g*) *Bull Performance.*—Two British Friesian bulls, Tarbig Leeokees and Doreward Adema 35th were maintained at stud throughout the year. Details of their performances are given in the table below—

Performance of Bulls

Bull	*No. of calves born during year*		*No. of services during year*	*No. of repeat services during year*	*Percentage Failure*
	Bull calves	*Heifer calves*			
Leeokees	7	9	48	9	18.7
Adema	13	20	60	16	26.6

It was noticed that Doreward Adema developed orchitis in October. Prolonged treatment following different courses including intramuscular penicillin and terramycin and external applications of sulphanilamide ointment, mag. sulph. and fomentations failed to produce improvement. It was decided by the Veterinary Research Officer, Lagos, and Veterinary Officer, Oyo (Messrs Slater and Morris respectively), to operate and remove the testicle affected. This was successfully carried out on 19th December, 1958.

The bull remained out of service for a period of sixty-four days from 16th December, 1958 until 18th February, 1959.

The fertility of both bulls and particularly in respect of Doreward Adema aroused concern towards the end of the year when it became apparent that an unusually high proportion of the adult herd were drying off and were not due to calve for many months. While it is possible that a percentage of the adult and now ageing White Fulani cows included in these figures may themselves be of doubtful fertility, it is thought that the comparatively high number of repeat services recorded against the younger bull may herald his infertility. Doreward Adema arrived at Agege in June 1955 and was five years old at the end of the year under review.

The general health of both bulls was good throughout the year in that they were never off their food. Minor ailments such as footrot were cleared up with external scraping and application of footrot ointment. Intramuscular injections of sulphamezathine were also administered for this condition. Leeokees maintained a capped knee which originated as a result of the bull's 18-cwt frame going down on this joint on a hard floor. The Veterinary Research Officer described the condition as chronic and added that so long as the bull was not restricted in movement as a result, it was advisable not to resort to surgery.

The three Montbeliard bulls, M20, M21 and A89 were culled and slaughtered in June and July as a result of a change in breeding policy. This breed had not come up to expectations, and it was therefore decided to put Montbeliard cows to the Friesian bulls.

A new British Friesian bull, Thurlow Recognition had been purchased and was *en route* to Nigeria at the close of the year.

Deaths Analysis

Breed	*No.*	*Sex*	*Date born*	*Died*	*Age at Death*	*Cause*
¾ F.	A260	Heifer	21–9–57	12–4–58	7 months	Heartwater.
¾ F.	A306	Heifer	4–6–58	4–6–58	—	Premature birth.
Mont.... ...	A280	Heifer	13–1–58	28–6–58	5½ months	Helminthiasis.
Mont.... ...	A158	Heifer	18–9–55	1–8–58	35 months	Streptothricosis.
½ F.	A290	Heifer	14–2–58	8–8–58	6 months	Gastroenteritis and worms.
½ F.	A254	Heifer	28–7–57	27–8–58	13 months	Weakness and Anaemia.
¾ F.	A296	Heifer	20–3–58	6–10–58	6½ months	Heartwater.
¾ F.	A317	Heifer	25–8–58	9–10–58	1½ months	Navel ill.
Zebu x Mont...	A333	Heifer	10–11–58	15–11–58	5 days	Weakness from birth.
¾ F.	A349	Heifer	12–1–59	12–1–59	—	Died at birth.
¾ F.	A281	Heifer	14–1–58	14–2–59	13 months	Suspected heartwater.

The herd was tuberculin tested in October by the Veterinary Research Officer, Lagos. The intradermal Comparative Test was employed, using avian and mammalian tuberculin imported from Weybridge, England. All the animals over two years of age which were tested, including the Friesian bulls Tarbig Leeokees and Doreword Adema, passed the test.

Minor cases of ill-health including loss of appetite, abnormal temperature, discharges from vulva, mastitis, lameness, constipation, scouring, were successfully treated throughout the year.

There was one case of Bovine Farcy in a three year old heifer, confirmed after post-mortem and there were three abortions, all negative to brucella abortus.

It is relevant under this section to mention the remarkable record of a White Fulani cow, No. W464, born at Shika on 18th December, 1940. There are records to show that this old cow, which is still in the herd, has calved thirteen times and aborted once during her life. Her average lactation is typical for the breed; 1,926 lbs in 230 days, but the aggregate production in thirteen lactations is 25,037 lbs, or just over 11 tons of milk.

Stock Inventory

The herd was maintained at just over 160 head. A number of the culled animals were the result of streptothricosis and demodex infection. The bull calves were culled for veal at one month of age and sold to the Olympic Hotel, Lagos.

The two tables below show the stock and breed inventories respectively.

Class of Stock	*On hand 1–4–58*	*Live births*	*Internal Transfer*	*Purchase*	*Deaths*	*Culls*	*On hand 31–3–59*
Cows	72	—	+21	—	—	15	78
Bulling and down calving heifers...	18	—	+318	—	1	7	28
Young heifers and calves	59	39	−39	—	10	2	47
Bull calves	8	25	—	—	—	25	8
Stud bulls	5	—	—	—	—	3	2
TOTAL	162	64	—	—	11	52	163

Breed Analysis as at 31-3-59

	Zebu	*½Fr.*	*¾F.*	*½ Mont*	*Pure Mont*	*Fr.*	*Total*
Cows	45	28	—	2	3	—	78
Stud Bulls	—	—	—	—	—	2	2
Bull Calves	—	2	6	—	—	—	8
Young heifers and calves ...	2	34	16	15	8	—	75
TOTAL	47	64	22	17	11	2	163

Building and Equipment

The new dairy buildings were completed and brought into use at the beginning of the year. The cost of these, including the equipment which is installed, amounted to £9,557.

The up-to-date methods of production in modern buildings brought about an immediate improvement in milk keeping quality. Only one report of sour milk was received during the year and this was attributable to a breakdown of the Rotorfreeze.

The provision of a laboratory greatly facilitated the work of veterinary diagnosis on the farm. With the availability of a microscope, centrifuge, electric heating and adequate sink and bench space, the routine tasks of faecal and blood examination were no longer carried out under antiquated conditions. A veterinary assistant and a microscopist were posted to the farm at the beginning of the year, both of whom have done valuable work.

In the construction of the buildings great attention was paid to disease and dirt control. Granolithic concrete floors were laid in the milking parlour, wash up and pasteurising rooms as well as in the laboratory. Everywhere possible and necessary, floor joints have been rounded with walls, to facilitate cleaning.

Influence of LNPK treatments on *Panicum Maximum* yield in lbs/Dry Matter/Acre. Agege Dairy Farm. December 1957 to December 1958.

	1st Harvest	*2nd Harvest*	*3rd Harvest*	*4th Harvest*	*Average 4th Harvest*	*Difference from no treatment*
	3-12-57	30-4-58	25-7-58	10-12-58	—	—
No Treatment	1,677	399	568	546	797	—
L	1,545	374	574	476	742	−55
N	2,397	528	858	546	1,082	+285
P	1,219	436	726	445	706	−91
P	1,996	338	726	870	982	+185
NP	1,940	460	802	648	962	+165
NK	2,474	350	587	1,385	1,199	+402
PK	1,746	301	638	673	839	+42
NPK	3,312	405	600	1,492	1,452	+655
LNPK... ...	2,474	276	656	1,029	1,108	+311

N.B.—N = 100-lbs/acre
P = 100-lbs/acre of P_2O_5
K = 100-lbs/acre of K_1O
L = 1,000-lbs/acre of CaO

Lime was applied in one application in October, while N, P and K were applied in two equal applications in October and April.

The greatest response was from NPK, and all the treatments responded well to N.

Influence of LNPK on *Axinopus Compressus* Yields in lbs/Dry Matter/acre. Agege Dairy Farm. December 1957 to December 1958.

	1st Harvest	*2nd Harvest*	*3rd Harvest*	*4th Harvest*	*Average of four Harvests*	*Difference from Control*
...	2-12-57	30-4-58	24-7-58	10-12-58	—	—
No treatment ...	420	843	1,238	711	803	—
L	398	1,066	1,013	845	830	+27
N	955	1,077	1,285	1,319	1,159	+356
P	535	1,077	1,152	856	905	+102
K	764	1,066	1,205	1,230	1,066	+263
NP	1,495	1,206	1,318	1,247	1,316	+513
NK	1,293	1,109	1,927	1,754	1,520	+717
PK	808	1,077	1,324	997	1,051	+248
NPK	1,131	971	2,256	1,958	1,579	+776
LNPK... ...	1,186	1,141	1,894	2,034	1,563	+760

N.B.—N = 100-lbs/acre
P = 100-lbs/acre of P_2O_5
K = 100-lbs/acre of K_2O
L = 1,000-lbs/acre of CaO.

Lime was applied in one application in October, while N, P and K were applied in two equal applications in October and April.

The greatest response was again to the dressing of NPK, but it is interesting to note that the application of N alone produced a 300 per cent increase in yield.

B.—Livestock Investigation Centre, Ado-Ekiti

This station is one in which investigation of the indigenous breeds of livestock is carried out. Unfortunately, due to a shortage of professional staff, the role of this centre has only partially been fulfilled. The investigations have been confined to the collation of data on Muturu cattle and Dwarf sheep and to the management of planted pasture.

At the close of the year a total of 129 cattle were held at the Centre. During the year there were fifty-two calves born, with an average birth weight of—

Male	27.0 lbs
Female	26.3 lbs

There were twelve deaths during the year but of these eight were ascribed to reaction to Lapinised Rinderpest Vaccination carried out during the third quarter of the year. Three of the other deaths were due to Piroplasmosis. The remaining death was in a newly born calf.

The following table gives an indication of the calving interval of the herd.

Record of Calving Interval

Cow No.	*Date calved*	*Calf sex*	*Birth weight lbs*	*Date calved*	*Calf sex*	*Birth weight lbs*	*Days between calving*
91 ...	—	—	—	18–4–58	F	31	—
2 ...	19–4–58	M	33	25–2–59	M	29	312
83 ...	13–12–56	F	25	22–4–58	F	30	525
14 ...	2–5–58	F	26	2–2–59	F	20	304
53A ...	—	—	—	7–5–58	M	32	—
82 ...	8–4–57	F	28	2–5–58	F	32	389
34 ...	29–6–57	M	28	31–5–58	F	29	336
84 ...	19–4–57	M	32	31–5–58	F	28	407
21 ...	30–6–57	M	29	5–6–58	F	28	340
92 ...	—	—	—	6–6–58	F	20	—
6A ...	24–6–57	F	22	6–7–58	F	29	377
11A ...	12–8–57	F	27	9–7–58	M	24	311
§ ...	10–4–57	F	29	20–7–58	F	29	466
77 ...	19–2–57	M	28	21–7–58	F	26	517
3A ...	7–9–57	F	35	23–7–58	F	30	219
58A ...	—	—	—	24–7–58	F	25	—
56A ...	5–3–57	F	17	28–7–58	M	32	510
15 ...	5–9–57	F	25	29–7–58	M	29	327
16A ...	13–9–57	F	25	29–7–58	F	27	319
§ ...	16–9–57	F	30	2–8–58	M	33	320
39 ...	29–6–57	M	28	7–8–58	F	24	404
72A ...	—	—	—	8–8–58	F	29	—
13 ...	7–10–57	F	30	9–8–58	F	24	306
23 ...	26–9–57	F	25	11–8–58	F	25	319
66A ...	—	—	—	10–8–58	M	25	—
61A ...	—	—	—	20–8–58	M	26	—
1A ...	7–10–57	M	28	13–9–58	F	22	341
50 ...	10–11–57	F	30	19–9–58	F	26	313
48 ...	21–10–57	M	27	20–9–58	M	28	334
24A ...	23–10–57	M	30	26–9–58	F	23	337
40A ...	12–10–57	F	27	8–10–58	F	27	330
25A ...	1–11–57	M	30	10–10–58	F	32	344
68A ...	—	—	—	11–10–58	M	28	—
18 ...	8–12–57	F	30	18–10–58	M	27	315
42 ...	27–11–57	F	25	18–10–58	M	22	325
97A ...	—	—	—	23–10–58	F	20	—
76 ...	28–5–57	F	29	8–11–58	M	31	529
67A ...	—	—	—	26–11–58	M	20	—
47A ...	20–11–57	F	28	2–12–58	F	26	306
65A ...	—	—	—	5–12–58	M	25	—
59A ...	—	—	—	28–12–58	M	26	—
90 ...	13–12–57	F	29	19–12–58	F	24	371
79 ...	23–12–57	M	28	14–12–58	M	28	356
1 ...	18–12–57	M	26	12–12–58	M	26	359
3 ...	10–11–57	M	33	10–12–58	M	24	396
1 ...	16–12–57	M	27	2–1–59	M	23	382
C9 ...	29–11–57	M	23	13–2–59	M	23	441
60A ...	—	—	—	23–2–59	F	25	—
2 ...	19–4–58	M	33	25–2–59	M	29	312
14 ...	2–5–58	F	26	3–2–59	F	20	304
62A ...	21–2–58	M	26	3–2–59	M	18	387
83A ...	—	—	—	29–3–59	M	25	—
Total ...		38	1,056		52	1,369	13,910
Average ...		—	27.7		—	26.3	336.3

In regard to live-weight increases, the subjoined table gives some indication of the gains in weight for the various age groups. It must be understood that these animals though on planted pasture do not receive any supplementary feeding. During the

period 1st October to 31st March the nutritional value of the herbage is exceedingly low. Under the traditional methods of bush grazing the majority of stock lose weight during this dry season period. Next year the feeding of silage is to be carried out during this time of the year.

The highest recorded weight on the farm is 519 lbs in a five-year old steer. Maturity under present husbandry appears to be reached at about four years.

Weight Gains of L.I.C. born Cattle

Animal No.	*Date borne*	*Sex*	*Weight at birth lbs*	*1–4–58*	*31–3–59*	*Gain*	*Loss*
137A ...	31–5–58	F	28	—	148	120	—
138A ...	31–5–58	F	29	—	165	138	—
139A ...	5–6–58	F	28	—	181	153	—
140A ...	6–6–58	F	20	—	124	104	—
28B ...	6–7–58	F	29	—	185	156	—
29B ...	9–7–58	M	24	—	182	158	—
141A ...	20–7–58	F	29	—	152	123	—
142A ...	21–7–58	F	26	—	148	122	—
30B ...	23–7–58	F	30	—	160	130	—
31B ...	24–7–58	F	25	—	132	107	—
32B ...	28–7–58	M	32	—	Died on 7–11–58		—
143A ...	29–7–58	M	29	—	157	128	—
33B ...	29–7–58	F	27	—	156	129	—
144A ...	2–8–58	M	33	—	164	131	—
145A ...	7–8–58	F	24	—	120	96	—
34B ...	8–8–58	F	29	—	126	97	—
146A ...	9–8–58	F	24	—	126	102	—
157A ...	11–8–58	F	25	—	114	89	—
35B ...	20–8–58	M	26	—	Died on 8–1–59		—
36B ...	13–9–58	F	22	—	128	106	—
148A ...	19–9–58	F	26	—	111	85	—
149A ...	20–9–58	M	28	—	120	92	—
37B ...	26–9–58	F	23	—	129	106	—
38B ...	8–10–58	F	27	—	100	73	—
39B ...	10–10–58	F	32	—	122	90	—
40B ...	11–10–58	M	28	—	120	92	—
150A ...	18–10–58	M	27	—	126	99	—
151A ...	18–10–58	M	22	—	74	52	—
41B ...	23–10–58	F	20	—	Culled and slaughtered on 28–2–59		
152A ...	8–11–58	M	31	—	109	78	—
42B ...	26–11–58	M	20	—	60	40	—
43B ...	2–12–58	F	26	—	102	76	—
44B ...	5–12–58	M	25	—	55	30	—
153A ...	10–12–58	M	33	—	86	53	—
154A ...	12–12–58	M	28	—	82	54	-
155A ...	19–12–58	M	26	—	72	46	—
156A ...	19–12–58	F	24	—	58	34	—
45B ...	28–12–58	M	26	—	48	22	—
137A ...	2–1–59	M	24	—	43	19	—
35B1 ...	10–8–58	F	25	—	104	79	—
158A ...	13–2–59	M	23	—	28	5	—
46B ...	23–2–59	F	25	—	41	16	—
159A ...	25–2–59	M	29	—	61	32	—
160A ...	2–3–59	F	20	—	31	11	—
47B ...	15–3–59	M	18	—	Died on 22–3–59		—
48B ...	29–3–59	M	25	—	38	13	—

Sheep Census

Animals	*No. on hand 1–4–58*	*Birth*	*Purchase*	*Slaughter*	*Death*	*Sale*	*Transfer*		*No. on hand 31–3–59*
							In	*Out*	
Rams	1	—	—	—	1	—	—	—	—
Ewes	6	—	—	2	2	—	3	—	6
Gimmers	3	—	—	1	1	4	—	3	—
E. Lambs	10	6	—	1	4	—	—	5	6
R. Lambs	2	5	—	1	4	—	—	2	—
Wedders	6	—	—	5	2	—	2	—	1
Total	28	11	—	10	17	—	10	10	13

Sheep

The flock of sheep maintained on the L.I.C. had a most unsuccessful year. Disease has been largely responsible for this state of affairs. As mentioned earlier under sheep diseases, mycotic dermatitis led eventually to the slaughter out of all the flock.

Below are recorded the birth weights of the lambs born on the farm:

Lamb No.	*Date Born*	*Birth Weight Lbs*	*Lamb Sex*	*Dam No.*
6C2	18–4–58	2	F	6C
8F1	20–4–58	3	F	8F
6C1B1	5–5–58	3	M	6C1B
1J	6–5–58	4	M	1
8H	12–5–58	5	M	8
8G2	10–6–58	4	F	8G
11B1D	14–6–58	3	F	11B1
11B1E	14–6–58	3	M	11B1
6C1G	16–6–58	3	M	6C1
6C1F	16–6–58	3	F	6C1
1H2	16–6–58	3	F	1H
6C1C1	29–7–58	4	F	6C1C

Trypanosomiasis.—During routine blood smear examination of the herd nine animals were found to be positive. Of these in seven cases the parasite encountered was T.vivax, and the remaining two T.congolense. Only in one case was treatment administered, in the remaining cases negative results were obtained on blood examination within a few days. These positive smears were found during the period July to January. This is the period of the lowest level of nutrition.

Pastures.—Up to the end of the year under review a total of 181.9 acres of land has been fenced. Particulars of how it has been disposed of are as shown below:

Cropping	*Acreage*
Giant Star and Centrosema	70.48
Centrosema only	31.00
Elephant Grass for Fodder only	21.56
Rough pasture uncultivated	39.70
Uncleared thick bush	19.14
TOTAL	181.88

A total area of 162.74 acres available for both grazing and fodder has worked out as 1.6 acre per adult unit per annum. The general system of pasture management, *i.e.*, grazing, mowing and resting has been maintained throughout the year. No artificial fertiliser was used on any of the fields. On fields 7 and 8 Centrosema yellow patches have occurred. The cause of this is yet to be investigated. Wiry grass has almost taken possession of fields 4 and 5. These will have to be ploughed later and replanted with Giant Star/Centrosema.

Meteorological Data.—The particulars of annual rainfall for the year and those of the previous four years are given below. Figures are in inches—

Year	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*Mar.*	*Annual Total*
1958-59 ...	3.63	2.32	5.47	0.21	2.64	10.28	9.28	2.72	0.55	0.09	0.89	3.65	41.74
1957-58 ...	7.33	8.47	7.05	10.14	6.89	9.49	7.49	4.54	0.74	0.98	2.22	2.83	68.15
1956-57 ...	4.67	5.32	5.04	1.43	—	9.54	7.28	2.27	2.74	0.64	0.98	3.21	43.12
1955-56 ...	4.25	6.76	5.26	6.74	1.94	13.61	3.01	0.61	0.06	—	3.75	6.18	52.17
1954-55 ...	8.93	8.55	5.26	2.13	5.27	9.75	10.85	3.03	0.19	0.29	0.92	6.78	62.95

C.—Regional Stock Farm, Fashola

The stock farm has continued throughout the year in the multiplication of N'dama cattle for distribution throughout the Region. At the close of the year there were 616 cattle of all classes on the farm.

	Stock on hand 1-4-58	Births	Deaths	Culls	Internal Transfer		External Transfer		Stock on hand 31-3-59
					In	Out	In	Out	
BREEDING STOCK:									
Imported—Bulls	2	—	—	2	—	—	1	—	1
Cows	71	—	—	18	—	—	—	19	34
Home Bred—Bulls	13	—	—	3	—	—	—	—	10
Cows	279	—	1	2	48	—	—	182	142
NON-BREEDING 25-30 MONTHS:									
Bulls	70	—	4	15	68	—	—	77	42
Heifers	31	—	—	—	47	48	—	21	9
YOUNG STOCK 19-24 MONTHS:									
Bulls	32	—	14	1	107	68	—	3	53
Heifers	18	—	3	—	80	47	—	26	22
13-18 MONTHS:									
Bulls	42	—	4	2	143	107	—	7	65
Heifers	30	—	2	—	120	80	—	13	55
CALVES—7-12 MONTHS:									
Bulls	71	—	2	—	149	143	—	37	38
HEIFERS	51	—	1	—	138	120	—	25	43
0-6 MONTHS:									
Bulls	96	138	1	1	1	149	—	23	61
Heifers	85	128	2	—	—	138	—	29	44
TOTAL	891	266	34	43	900	900	1	460	616

The weather was disappointing in that the rainfall was both low in quantity and poor in distribution. During the period April 1958 to March 1959, 39.93 inches were recorded. April had the heaviest rainfall for the month on record, nine days provided 7.36 inches. The short dry season was longer than usual in that it extended from the middle of June until the end of August. The late rains started on 16th September with 3.41 inches in one hour, the total for the month being 8.60 inches.

Distribution

Cattle sold from the farm realised £6,617. In addition, distributions to Ministry farms and kraals were in cash equivalent to £1,810. Six Ndama steers ex-Fashola were sold by auction at the Oyo Agricultural Show and realised £118. This method of disposal, new to this area, may provide more satisfactory means of disposal of steers and culled stock than the haggling so much enjoyed by local butchers and traders.

The distribution may appear excessive but was in the main due to the lack of keep during the dry season which necessitated an urgent reduction in numbers. It is now the policy of the farm to have an annual review of the carrying capacity in the light of the progress made with the pasture development programme.

Animal Health

In April 1958, twenty-three deaths were recorded; these all occurred in stock which had early that month received primary vaccination with Lapinised Rinderpest Virus. These animals, all over six months old, showed gastritis, enteritis and lachrimation with temperatures of 105° to 107°F. The whole of the herd over six months old had been vaccinated but it was only among the animals receiving the vaccine for the first time that violent reactions were recorded.

Other deaths during the year amounted to approximately 3 per cent of the herd and were due to injuries, helminthiasis, etc.

Culls have largely been among old cows and cows with unsatisfactory breeding histories. It would appear that after the sixth calf has been produced the cow's level of production in terms of the calf's birth weight and growth rate (*i.e.*, dam's lactation) is reduced.

The fly-proofing of the sick-bay allowed more comfort for the animals under treatment and the more rapid healing of wounds.

Dipping of all stock, apart from heavily in-calf cows, has continued through the year. Plans are now proceeding for the erection of a Cooper spray race. This will be more economical in operation, allow all stock to be treated and if necessary permit a change of agent with but little difficulty.

Births

Two hundred and sixty-six live births were recorded. It would appear that a pattern exists giving the highest number of births in the "Spring" and "Autumn".

Months	*Birth*	*Deaths*	
		Male	*Female*
April 1958	29	—	1
May 1958	28	—	—
June 1958	14	—	—
July 1958	20	1	—
August 1958	23	1	—
September 1958	29	1	1
October 1958	26	—	1
November 1958	22	—	—
December 1958	9	—	—
January 1959	7	—	—
February 1959	10	—	—
March 1959	19	—	—
TOTAL	266	3	3

Anthelmintic Treatments

These followed the programme recommended by the Veterinary Parasitologist (Mr R. P. Lee) and included the use of Coopane, Phenothiazine and Copper Sulphate. Attention was also given to the rotational grazing of pastures.

Vaccinations

Routine vaccinations were carried out against Rinderpest, Anthrax and Pleuropneumonia. It has now been decided, on the advice of the Department of Veterinary Research, that Lapinised Rinderpest Virus will only be given to stock of one year old and then only administered during the dry season.

Trypanosomiasis

A tsetse survey of the farm was carried out in the period 3rd to 12th May, 1958 by the staff of the West African Institute for Trypanosomiasis Research. During the ten-day period, forty-seven flies were caught. These were all found along the streams and were all Glossina palpalis. Forty-five flies were dissected, none was found to be infected.

All bloodsmear examinations of the farm stock have been negative during the year. The routine monthly blood smear examination has been discontinued as no positive slides have been found during the last few years.

INVESTIGATIONS

Measurement of Stock

The subjoined table gives the results of the measurement of Ndama stock in relation to their live-weight.

Age	No. of Animal Involved	Average Weight Lbs	Head to Shoulder	Shoulder to tail drop	Height at Shoulder	Girth
(a) BULLS:						
6-9 months	29	235	18	32	36	44
10-12 months	51	250	19	33	38	45
13-15 months	26	273	19	33	38	45
16-18 months	29	307	21	35	39	48
19-21 months	23	361	23	37	41	51
22-24 months	8	422	23	39	42	54
25-27 months	7	458	25	40	43	56
28-30 months	8	494	26	41	45	56
31-33 months	16	533	26	41	45	59
34-36 months	12	562	27	42	46	61
3½-4 years	9	710	28	45	49	66
5-6 years	10	732	26	46	49	66
7-11 years	4	757	29	50	50	66
(b) HEIFERS:						
6-9 months	32	220	18	32	36	43
10-12 months	40	209	19	31	36	43
13-15 months	22	239	19	32	37	44
16-18 months	9	299	21	35	38	47
19-22 months	5	257	21	35	41	50
2-3 years	7	502	25	40	44	57
4-5 years	7	521	25	43	44	59
6-7 years	11	554	26	43	45	59
Above 9 years	11	569	26	43	44	60

L.R.V. Trial

After the experience with this vaccine in April 1958, it was considered advisable to undertake a vaccine trial prior to the vaccination of the whole herd.

The total number of cattle in the trial was sixty-six, which for administrative reasons could only be divided into three groups. Temperatures were taken once daily between 7.30 a.m. to 8.30 a.m. and were recorded for the thirty days after vaccination.

Group A

Consisted of twenty-two animals, eleven males and eleven females which had never before received Lapinised Rinderpest Virus. Their ages ranged between 7½ months and 13½ months. Of the twenty-two animals in this group, *all* showed temperature reactions varying from 103.2° to 106° and fifteen scoured. The incidence was as follows:

Two showed temperatures on the 7th day after vaccination;
Six showed temperatures on the 8th day after vaccination;
Five showed temperatures on the 9th day after vaccination;
Eight showed temperatures on the 10th day after vaccination.

Fourteen of the fifteen animals that scoured did so within twenty-four hours of their rise in temperature. The scouring lasted for twenty-four to forty-eight hours.

The 15th member of the group that scoured showed temperatures of 105° on both the 7th and 8th day after vaccination, started scouring on the 9th day and continued to do so for four days. Recovery was uneventful with all, and the whole group grazed well and maintained condition throughout the trial period.

Group B

Consisted of twenty-two animals (eleven males, eleven females), whose ages ranged from fourteen to seventeen months. All these animals had been vaccinated once before on 2nd April, 1958, *i.e.*, nine months previously.

It became apparent after a while that with this group, a minimum figure which represented a temperature had to be decided. Any recording over 102° was decided upon. On this basis the re-actions were as follows:

Eight showed no temperature at all.

Fourteen showed temperatures ranging between 102° to 105°.

Of the fourteen that showed temperature reactions, four scoured.

Herewith their details—

Sex	*Age*	*Temp. Reactor*	*Temp.*	*Scoured*	*Duration*
Female	15 months	8th day	105.8	10th day	2 days
Female	14½ months	8th day	105.4	10th day	2 days
Male	16 months	7th day	103.4	9th day	2 days
Male	14 months	8th day	102.8	9th day	1 day

Recovery was uneventful and all grazed and maintained their condition throughout the trial.

Group C

Consisted of twenty-two animals and is best divided into two sub-Groups—

(*i*) Eleven cows ages ranging between six and a half years to aged, all with calves at foot and,

(*ii*) Eleven steers ages ranging between two and a half to three years. All had been vaccinated last with Lapinised Rinderpest Vaccine on 2nd April, 1958.

In Sub-Group (*i*), the temperatures with the exception of one cow remained in the range 100° to 101.8°. The exception showed a temperature of 102.2° on the 9th day after vaccination and the faeces were somewhat looser than normal for that day. No untoward symptoms were noticed amongst the calves which were not temperatured.

In Sub-group (*ii*), with one exception there was no temperature or other reaction the limits being 100° to 101.8°. The exception showed a temperature of 102.2° on the 8th day after vaccination and secoured a little on the 10th day.

All the animals in this group grazed well and maintained their condition throughout the trial which as stated earlier lasted for thirty days and was concluded on 5th February, 1959.

Performance of Bulls:

An attempt was made to assess the performance of the stock bulls. Unfortunately, the great variation in the level of nutrition on the farm during the years under review has allowed only limited comparisons to be made. In 1947-48, there was abundant grazing though this was unimproved bush and during this year the birth weights were in the 41-42 lbs bracket. In 1949, shortage of grass was first recorded and in the next few years birth weights dropped to 30-40 lbs. Also growth rates were reduced from 224-279 lbs at one year to 190-229 lbs at one year old. This period is one in which there was a serious build up of the worm burden both in stock and on pastures. This was first investigated by the parasitologist in 1956.

1953 saw the start of some pasture improvement work but it was not until 1957-58 that an extensive expansion of the planting of pastures took place.

The result of anthelmintic treatments and a higher level of nutrition has been reflected in the vastly improved birth weights and growth rates up to one year. Birth weights in 1958 reached 50 lbs and young stock at eight to nine months old are reaching weights previously only achieved by yearlings.

Due to these varying conditions of nutrition and other extraneous influences and most of all variations in the size of the breeding herds, comparison of the performance of the bulls must be left until conditions become constant.

Pasture Improvement:

Cattle raising in this Region must depend largely on bush grazing. On Government farms it is possible to convert bush to planted pastures and allow a higher standard of nutrition.

At Fashola, the initial stage in pasture improvement was the establishment of overnight paddocks where animals were confined after their day of bush grazing. This replaced that part of the traditional system where stock were tethered to posts from 6 p.m. to 10 a.m. These overnight paddock were small in size but as there were several, they could be used in rotation to control helminthiasis. This system achieved good results and is probably the one which should be offered to local stock owners at least for animals between weaning and two years old.

Additional pasture improvement work has enabled larger areas to be fenced, planted and supplied with water so that some of the stock are spending the whole of their time on improved pasture. The programme has not yet reached the stage when all stock are maintained entirely on improved pasture.

The assistance of an American Pasture Agronomist, Dr Gilbert Ahlgren, has done much to set out investigations of pasture grasses and legumes. The present pastures have relied largely on *Cynodon plectostachyum* either on its own or mixed with *Centrosema pubescens*. Doubt has been cast on the feeding value of the former but once established it has succeeded in suppressing weeds and offering at least maintenance level of nutrition. Its low level of protein is offset by the incorporation of Centrosema.

Panicum maximum and *Pennisetum purpureum* have been grown at Fashola in limited quantities. *Digitaria decumbens* was recently introduced and on analysis offers a better nutritional level than *Cynodon* but its survival during the dry season and also its management under the conditions pertaining in this Region have still to be investigated.

It may be shown that a mixture of a legume, a stool type of grass and a close mat-forming grass may meet the requirements, *e.g.*, *Centrosema*, *Panicum and Cynodon*.

During the year efforts have been directed at—

(*a*) Maintaining established pastures at maximum production by rotational grazing, application of fertilisers, removal of weeds and topping after grazing.

(*b*) Establishing new pastures.

(*c*) Establishing a rotational system of bush grazing.

The establishment of new pastures followed a routine consisting of—

(*a*) Stumping with a Monkey Winch and hand labour

(*b*) Ploughing with a Disc plough

(*c*) Disc harrowing

(*d*) Cultivating

(*e*) Where the surface is still rough spike toothed harrowing.

(*f*) Sowing either with a seed drill or Teagle broadcaster.

(*g*) Rolling with a Cambridge roller.

Pasture Experiments.—The Research work carried out was under the direction of Doctor G. Ahlgren. There was very close collaboration between the I.C.A. and Fashola staff. The tables quoted are the results of statistical analysis carried out by Doctor G. Ahlgren. These experiments are designed to solve immediate and pressing problems. They are simple but are of reliable designs.

The Research programme consisted of—

(*i*) Trial of new species—Pangola (*D. decumbens*) Mollasses grass (*M. Minutiflora*).

(*ii*) Management Investigations.

(*a*) The influence of height and interval of cut on Giant Star Grass and Gamba grass.

(*b*) The use of live fences for paddocking in Nigeria. Mainly *Glyricidia*, *Jatropha* and *Cassia* species.

(*iii*) Fertiliser Trials.

(*a*) Rate and time of application of L.N.P.K. and their combinations on *Centrosema pubescens*.

(*iv*) Grazing Trials.

(*a*) The influence of Nitrogen on the carrying capacity of Giant Star Grass pastures.

(*b*) Comparison of the carrying capacity of pastures of Giant Star, Guinea Grass and their mixtures.

These investigations though carried out at Fashola were conducted by the I.D.S. staff, the results therefore are to be found in the Report of that Section.

Silage

The conservation of food for dry season feeding must be accepted if cattle are to maintain their body weights during the dry season. At Fashola, efforts have previously been made to make hay and silage. These efforts proved of little avail as the animals failed to eat the end products.

In the year under review, an attempt was made to make maize silage. This served two purposes, firstly it allowed for the cleaning of land prior to planting pasture and also provide excellent material to ensile. The maize crop yielded 5-8 tons per acre. Three pits were used, the first contained maize, the second maize and Elephant grass while the third Guinea grass, Kyasuwa, Mucuna and a little poor quality maize. Altogether between 90-100 tons of finished silage was made which was used as supplementary food for 600 cattle from 19th January until 5th March.

It has now been established that the growing of maize for silage will form part of the programme of pasture extension. After the land has been cleared a crop of maize will be taken off before it is planted with a grass/legume mixture.

One point which requires attention during the feeding of silage in the dry season is that care needs to be taken that pasture is not ruined by the trampling of cattle at the time they are relying on silage for their nutrition. Several useful grasses can be ruined beyond wet-season recovery by trampling cattle.

It was found that *Cynodon* did stand up to this treatment during the dry season without adversely affecting the aggressiveness of its growth when the rainy season started.

Pasture Weed Control

The major weeds are *Imperata*, *Amaranthus*, *Sida*, *Acanthospermum* and *Sporobolus*. Experience has shown that *Sida* requires to be uprooted prior to seeding. *Amaranthus* and *Acanthospermum* are both destroyed by spraying with "Fernesta".

D.—Poultry Development Centre, Fashola

This station, adjacent to the Stock Farm, occupies 500 acres. Its main objective is to produce improvement types of poultry for distribution to poultry keepers throughout the Region. Other activities are—

(*a*) Providing a base and teaching material for twice yearly courses in poultry keeping. Each course which is both theoretical and practical is of three months duration.

(*b*) Providing material for display at Agricultural Shows on improved methods of poultry production.

(*c*) Providing farmers with an advisory service through their provincial agricultural officers.

The organisation of the farm has remained on the lines established for a number of years which has utilised, free range, semi-intensive and intensive methods. However, there has been a change of emphasis in that more attention is being given to intensive methods using deep litter and battery cages.

Revenue

The revenue collected during the year was £8,245, an increase of over £2,000 over that obtained in 1957-58. The prices for farm products remained the same as in the previous year.

	s	*d*	
Hatching Eggs	9	0	per dozen
Table eggs below 1½ oz	3	0	per dozen
Table eggs 1½-1¾ oz	4	6	per dozen
Table eggs 1¾ oz and above	6	0	per dozen
Table chickens...	1	6	per lb liveweight
Day old chicks	1	6	each
1 month-old birds	2	6	each
2 month-old birds	5	0	each
3 month-old birds	7	6	each
4 month-old birds	10	0	each
5 month-old chicks	12	6	each
6-7 month-old birds	15	0	each
Cocks and Pullets in full lay	20	0	each

Visitors

The farm had many visitors during the year including His Excellency the Governor, the honourable the Premier and other Ministers. Several visitors came from overseas and there was interest shown in the farm's activities by Educational Institutions such as the University College, Ibadan, and Schools of Agriculture.

Climatic Conditions

As climate has a definite effect on the productivity of imported stock details are given below of rainfall with comparative figures, temperature and relative humidity.

Month	Rainfall in Inches			No. of Wet Days		
	1956-57	1957-58	1958-59	1956-57	1957-58	1958-59
April	4.19	6.3	6.36	4	13	9
May	3.77	9.89	4.77	9	14	11
June	7.09	5.45	3.06	17	16	13
July	1.80	8.9	0.06	10	22	2
August	0.75	6.26	1.94	11	19	10
September	4.42	7.66	8.60	16	22	16
October	7.56	5.53	7.36	12	15	17
November	4.08	1.63	3.75	5	10	9
December	0.94	0.26	0.18	4	2	3
January	1.05	—	0.06	2	—	1
February	0.02	1.64	0.87	1	1	4
March	6.21	1.77	1.92	6	3	6
Total	41.60	54.57	39.93	97	137	101

Month	Temperature		Relative Humidity	
	Maximum	Minimum	10 a.m.	4 p.m.
April	89.6	67.0	81.9	63.0
May	82.0	67.1	85.2	68.6
June	83.6	71.4	84.5	75.6
July	81.0	68.0	83.2	69.0
August	83.0	69.0	83.0	66.7
September	83.6	70.2	87.7	71.0
October	86.3	70.4	85.4	66.4
November	88.7	72.4	84.9	63.6
December	90.3	72.0	81.4	50.1
January	93.4	66.7	68.3	28.5
February	95.5	70.0	68.9	36.4
March	95.0	74.4	74.0	45.2
Average	87.6	69.7	80.7	58.7

Stock Position

At 31st March, 1959 9,096 head of poultry were on hand. Particulars about the various breeds and classes are shown below:

(*a*) **Fowls**

Breed	Cock and Cockerels	Hens and Pullets	Growers and Chicks	Total
Rhode Island Reds	194	1,111	—	1,305
Light Sussex	3	40	—	43
White Leghorn	24	53	—	77
Brown Leghorn	57	77	—	134
Black Leghorn	—	3	—	3
White Wyandottes	—	1	—	1
Buff rocks	3	13	—	16
Ancona	6	42	—	48
Improved Nigerian (Samaru)	15	52	—	67
Cross breds	—	—	7,063	7,063
Total	302	1,392	7,063	8,757

(*b*) Ducks

Breed	*Drakes*	*Ducks*	*Duckling*	*Total*
Aylesbury	—	—	—	—
Pekin	4	12	—	16
Khaki Campbell	2	9	—	11
Nigerian Badagry	30	91	—	121
Mixed Breeds	—	—	133	133
Total	36	112	133	281

(*c*) Geese (Chinese)

Ganders	9
Geese	19
Goslings	16
Total	44

(*d*) Guinea Fowls (Local)

Cocks	4
Hens	10
Total	14

SUMMARY

(*a*) Fowls	8,757
(*b*) Ducks	281
(*c*) Geese	44
(*d*) Guinea Fowls	14
Total	9,096

Losses

The losses during the year are best shown as percentages of the total birds on the station. The figure has been divided into two sections—

Culled and destroyed	0.9 per cent
Deaths	2.5 per cent

The average percentage mortality for the various classes of fowls is given in the following table:—

	No.	*Percentage*
Chicks (0-8 weeks)	1,079	52.4
Growers (8-16 weeks)	239	11.19
Pullets	145	7.58
Cockerels	92	4.47
Hens	436	21.11
Cocks	67	3.25
TOTAL DEAD	2,058	100.0

Poultry Distribution

The total poultry distributed during the year was 10,659 birds. This is the second highest total in the last ten years (1956-57: 11,771). The breakdown of the distribution is shown in the table below:

Station/Division	*Cocks*	*Hens*	*Cockerels*	*Pullets*	*Chicks*	*Total*	*Value*		
							£	s	d
Oshun	—	50	255	150	150	605	285	0	0
Ilesha	—	—	366	180	—	546	308	10	0
Abeokuta	—	—	200	150	—	350	175	0	0
Ijebu-Ode ...	—	—	200	150	—	350	200	0	0
Benin	—	—	159	80	—	239	122	0	0
Delta	—	—	175	125	—	300	145	5	0
Owo	30	—	300	170	—	500	240	0	0
*Akure	—	—	37	192	—	243	139	15	0
Irrua	—	—	155	130	—	285	106	7	6
Ado-Ekiti ...	—	—	56	150	—	206	87	7	6
Ondo	—	—	84	100	—	184	87	0	0
Director, Eastern Region ...	—	—	8	—	—	8	8	0	0
Zaria	—	—	8	24	—	32	24	0	0
Ibadan	—	—	6	495	—	501	200	12	6
Ilaro	25	25	75	85	—	210	172	10	0
Kaduna	—	—	—	—	200	200	50	0	0
Ikeja	—	—	—	—	5,900	5,900	442	10	0
TOTAL ...	55	75	2,084	2,181	6,250	10,659	2,793	17	6

*Including 2 drakes and 12 ducklings.

Egg Production

There has been an annual decline in flock average egg yield since 1956-57. This is thought to be due to continuous close in breeding since 1953. The egg size has also deteriorated. Average yield per layer per month has varied between 6.46 and 8.20. The highest yields were obtained during January, February and March where the figure of 12.5 eggs per layer per month were obtained.

Urgent action is being taken to establish a commercial egg production unit on the farm using the battery and deep litter systems. Efforts are being made to import fresh strains and to develop a system of regular importations to avoid the in-breeding which has occurred over the last six years.

Incubation

The incubation records for the year are given below:

Number of eggs set	23,975
Infertile	7,169
Dead in Shell	3,601
Chicks hatched	13,205
Weak or deformed chicks	378

These results are not satisfactory and will be the subject of careful examination. No doubt the high incidence of infertile eggs reflects the effect of the hot dry weather in December to March which affects the energy of the cocks and the vitamin content of the herbage.

Routine vaccination were carried out against the following diseases:—Fowl Typhoid, Pox, Cholera and Newcastle Disease. Routine anthelmintic treatment was carried out using Piperazine and phenothiazine.

Lice infestation was controlled by dusting the birds with Agrocide Cotton dust and painting the perches with 16 per cent Nicotine Sulphate.

Coccidiosis became an occasional problem but was controlled by feeding Embazine to the birds up to twelve weeks old, careful disinfection of houses and utensils and the daily movement of chick runs to fresh ground.

Fowl Pox broke out in July. Quarantine measures were employed, and unaffected birds vaccinated. This disease had been a problem on the farm and as it had on one occasion been recorded soon after vaccination, instructions were issued that vaccine could not be used until the disease appeared in the vicinity of the farm.

Visceral Lymphomatosis was diagnosed in specimens sent to the Federal Veterinary Laboratories at Vom.

E.—Cattle Extension Scheme, Shaki

This scheme is a partnership one between Government and Fulani herdsmen. As payment for tending the cattle, the Fulani are allocated a proportion of the calf crop. In addition they receive a cash subsidy. This system has worked fairly well but it is essential that the partnership should cease next year and Government employ herdsmen at the standard labour rates.

The scheme uses Keteku cattle, a type indigenous to the area. The husbandry system is basically that used by the Fulani, *e.g.*, bush grazing throughout the day and tethered during the night.

This Unit has allowed a study to be made of the local method of cattle husbandry and to develop modifications of it which can confidently be offered to the Fulani as improvements. The unit can demonstrate that these adaptations have achieved the results claimed. The modifications so far introduced are—

(*a*) Freedom to graze for twelve hours daily;

(*b*) Provision of composite salt licks *ad lib;*

(*c*) Routine vaccinations against the major epizootic diseases;

(*d*) Routine anthelmintic treatment using, Piperazine, Copper Sulphate and Phenothiazine;

(*e*) Castration of bull calves.

The subjoined tables give the stock position during the year under review:

Stock Position

Stock on hand 1–4–58	*Births*	*Purchases*	*Deaths*	*Disposals*	*Stock on hand 31-3-59*
90	35	1	1	3	122

Classification of Stock

Date	*Stock on hand*	*Stock bull*	*Breeding cows*	*Heifers over one year*	*Heifers under one year*	*Steers over one year*	*Steers under one year*	*Bull calves for breeding*
1–4–58 ...	90	1	42	7	11	10	17	2
31–3–59 ...	122	1	40	17	12	27	22	3

Calf birth weights ranged between 27 and 52 lbs, the average being 41 lbs. The calving interval varied between 304 and 651 days, the average for the herd was 409 days. Two heifers calved during the year at the age of two and a half years.

The arrival of a weigh crush towards the end of the year will substantially add to the amount of data provided by the scheme.

14.—CONCLUSION

The year 1958-59 will be looked back on as one in which a newly formed Division of the Ministry went through many teething troubles. It will also be recalled as containing a period in which there was only one Veterinary Officer on duty in the Region.

Despite these severe limitations, a great deal was done in both the husbandry and health spheres. The fact that stations continued to operate on increasing scales speaks well for the few staff on duty during the year.

This report will have indicated that the Livestock Division's first year has not been an easy one, but it has been one which has shown clearly where the deficiencies exist.

It would be fool-hardy in any country in the world to expand the livestock industry in the absence of an effective veterinary service. If the Region is to be adequately covered, eight Veterinarians are required to be on duty in the provinces. They require not only Headquarters direction, but also the support of a diagnostic unit in the Region. A Veterinary Investigation Officer and Poultry Pathologist are required to staff this Unit.

On the husbandry side, adequate attention should be given to the building up of specialist staff. The first year of operation has shown that it is not satisfactory to second Agricultural Officers and Superintendents to this Division for a spell of temporary duty. In view of this, arrangement have been made for the training of staff in Animal Husbandry.

Once the staff are in place, then the work now going on can be fully recorded, the results carefully assessed and methods evolved which can be demonstrated and with confidence handed on to the livestock owners of the Region.

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